TECHNICAL NOTES

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Pine Plantations Offer Fire Protection Problems in Lake States

"Fire crowned upon reaching plantation 60 feet from origin. Burned 200 acres and traveled over 1 mile in first hour." This comment from the report of the 1953 South Branch fire on the Lakewood District, Nicolet National Forest, is indicative of the special fire control problem in Lake States pine plantations. The problem has public relations as well as economic aspects. The majority of planted lands are in areas of easy access, often along public roads, and, therefore, are very much in view of local citizens and summer tourists. This accessibility means a higher risk of fire occurrence. From an economic standpoint, plantations are relatively costly investments in forest growth.

The problem is centered in the fact that wildfire so often results in nearly total destruction of these young pine stands. Mostly this is due not only to the small size of the trees but also to the tendency of pine species to burn readily under conditions that preclude crowning in the broadleaf species.

As a forest type, second-growth pine in the Lake States rates high in fire occurrence. Records of 514 fires[1/] occurring on stocked commercial forest land (excluding grass and brush) within four national forests over a 5-year period reveal that the rate of fire occurrence on pine types is greater than that of any other single type.[2/]

The average size of fire on pine lands was also greater than on other types. Of the 107 fires occurring in pine stands, 58 percent were class B (1/4 acre to 10 acres) fires and 14 percent grew to class C (10 to 100 acres) or larger. Of the 407 fires occurring on other types, 50 percent were class B fires and only 8 percent developed into class C or larger. Assuming class A fires to be 1/4 acre in size, the average size per fire for pine types was 7.75 acres; for other timber types, 6.00 acres.

Damage to timber values on the class B and larger fires averaged $11.70 per acre burned on the pine types and only $6.20 per acre burned on all other types.

In parts of Lower Michigan and in Bayfield County in northern Wisconsin, the potentialities for major conflagrations are increased by the existence of contiguous plantations extending over large areas. Such a threat of disaster-scale fires justifies the concern of forest administrators over fire control problems in pine types.

1/ From 1950 through 1954 on the Chippewa, Chequamegon, Nicolet, and Lower Michigan National Forests.

2/ With the possible exception of oak types on the Lower Michigan National Forest.

(Over)

With approximately 1½ million acres of "acceptable" plantations established at the present time in the Lake States[3/] the problem is further magnified by the ever-increasing rate of planting in this region. Since World War II the acreage planted annually in the three states has climbed steadily from less than 30,000 acres in 1946 to more than 90,000 acres in 1955. The unprecedented burst of interest in private planting, along with the increasing use of mechanical planters, may cause the total acreage planted during the next few years to be limited only by the amount of planting stock that can be produced.

While it would be unrealistic to estimate the impact of pine plantations on future fire protection needs, it is safe to say that they will play a more substantial part than ever before in the business of forest protection.

3/ Timber Resources Review, Ch. IV. U. S. Forest Serv. 1955.

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